NOT FOR PUBLICATION

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

MATERIAL TECHNOLOGIES, INC. and,

NET SHAPE, LLC,

Plaintiffs,

v.

CARPENTER TECHNOLOGY

CORPORATION,

Defendants.

CIVIL NO. 01-2965 (SRC)

OPINION

CHESLER, District Judge

This matter comes before the Court on Defendant Carpenter Technology Corporation's ("Carpenter") Motion to preclude the testimony of Plaintiffs' designated trial experts on the grounds that the testimony fails to meet the standards prescribed by the United States Supreme Court in Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993). In this motion, Carpenter seeks to exclude Dr. Alan Lawley, Richard Philips, Ralph Hershberger, Dr. Frederick Warren-Boulton, and Francis C. Hand. The motion has been decided after hearing oral argument on May 17, 2005 and upon the written submissions of the parties. For the reasons given below, Carpenter's Motion will be granted with respect to Dr. Alan Lawley, Richard Philips, Ralph Hershberger, and Dr. Frederick Warren-Boulton. In this Opinion the Court also considers Carpenter's Renewed Motion to Strike Hershberger Report pursuant to Fed. R. Civ. P. 37(c)(1). The Court will reserve decision with respect to Francis C. Hand.

I. Background:

A. The Parties

Plaintiff Material Technologies Inc. ("MTI") is a New Jersey Corporation formed in 1993 by Ira Friedman ("Friedman"). Defendants' Joint Appendix ("JA") 18. Friedman is the president and sole owner of MTI. Plaintiffs' Counterstatement of Contested Material Facts Submitted Pursuant to L. Civ. Rule 56.1 ("PCSCMFC") ¶1.[1] Plaintiff Net Shape, LLC ("Net Shape") is a New Jersey limited liability corporation that was formed in mid-1999 as a developmental and distribution company dedicated the commercialization of dense powder metal parts. JA 37 at P8469; Deposition of Ira Friedman ("Friedman Dep.") at 181. Friedman is the sole owner of 100% of the membership interest in Net Shape.[2] PCSCMFC ¶3.

Defendant Carpenter Technology Corporation ("Carpenter") is a Delaware corporation with its principle place of business in Pennsylvania. PCSCMFC ¶5. Carpenter is engaged in the manufacture and sale of specialty metals including stainless steel and powder metals. Id. Carpenter's co-defendant, all counts against which were dismissed on summary judgment, was Vallourec, SA ("Vallourec"). _. Vallourec is a French holding company that specializes in tubing. JA 7, Deposition of Alain Honnart ("Honnart Dep.") at 7.

B. The Scanpac Process and Scanpac Powder

---

[1] Plaintiffs' Counter-statement of Contested Material Facts against Carpenter is organized by first setting out statements from Carpenter's Statement of Uncontested Material Facts followed by Plaintiffs' response, numbered the same. Paragraph numbers referring to PCSCMFC cite to the Defendant's original statements of fact and Plaintiffs' response, taken together.

[2] To the extent that their claims are co-extensive, for the sake of simplicity, Plaintiffs will be referred to collectively as "MTI."

In 1993, metallurgists developed a process of agglomerating gas atomized metallic powders. PCSCMFC ¶7. That process would later become known as the Scanpac process, and the resulting agglomerated powder known as Scanpac powder. Id. The co-inventor of the Scanpac process was Dr. Christer Aslund ("Aslund"), who at the time, was the Vice President and General Manager of Powder Development for Vallourec. See JA 5 at 00532.

As described by Aslund in a 1998 metallurgy industry journal, the benefit of Scanpac powder is that it can obtain high densities when fused at high temperatures, thereby potentially overcoming prior limitations on powder metal processing to produce products that closely match those of the comparable wrought material. JA 24 at CTDP000010. Wrought steel is formed by heating its metallic components to their melting point and then allowing the liquid steel to harden into a steel bar. Defendant's Memorandum of Law in Support of Motion to Preclude Plaintiffs' Experts ("Defs.' Supp. Mem.") at 3. The steel bar is thereafter cut, shaped and then machined to form a steel part. Plaintiffs' Appendix ("PA") 143 at 2. Powder metal, in contrast, is not heated and melted to form a part, but rather is pressed into shape, and thereafter heated (also known as sintering), but not to the melting point.

In a twenty-five count Complaint, filed on June 22, 2001, MTI originally charged Carpenter and Vallourec with various claims grounded in breach of contract and tort. On or about November 21, 2003, Defendants Carpenter and Vallourec each submitted separate Motions for Summary Judgment: MTI's claims for Unfair Competition and Breach of Fiduciary Duty survived summary judgment, in limited form. The crux of Carpenter's argument, at this stage, is that MTI, which for a time had certain sales rights to Scanpac, was unsuccessful in its efforts to sell, market, promote and develop Scanpac because it was never a viable product. MTI contends

that during much of the period before MTI's rights to Scanpac stainless steel powder were allegedly interfered with by Defendants, Scanpac was still in the development and test phase. MTI also argues, and offers expert testimony to show, that it has since obtained a patent on the processing of Scanpac powder; has perfected the sintering and debinding procedure; and that there are and always have been many promotional, developmental and marketing successes achieved and made possible by MTI in representing Scanpac. See, e.g., JA 194, Expert Report of Richard Phillips ("Phillips Report").

At the heart of this case is a substantial factual dispute over whether Scanpac powder was ever a viable product for commercial applications–and ultimately, Plaintiff's alleged damages rest on the expert testimony of the proposed witnesses discussed below.

II. Legal Analysis

A. The Daubert Standard

Since the Motion to preclude the testimony of each of MTI's expert witnesses implicates the admissibility standard for expert witnesses under Fed. R. Evid. 702 as elucidated by the Supreme Court in Daubert, the Court's legal analysis begins there.

Federal Rule of Evidence 702 provides that where

> scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702. "Rule 702 embodies three distinct substantive restrictions on the admission of expert testimony: qualifications, reliability, and fit." Elcock v. Kmart Corp., 233 F.3d 734, 741

(3d Cir. 2000). Daubert instructs that an "expert's opinion must be based on the 'methods and procedures of science' rather than on 'subjective belief or unsupported speculation;' the expert must have 'good grounds' for his or her belief." In re Paoli R.R. Yard PCB Litig., 35 F.3d 717, 742 (3d Cir. 1994) (quoting Daubert, 509 U.S. at 590). In other words, Daubert requires courts to perform a "gate keeping function" to ensure the relevance and reliability of expert testimony, and in Kumho Tire Co., Ltd. v. Carmichael, 526 U.S. 137 (1999), the Supreme Court extended this gatekeeping obligation from scientific evidence to encompass all expert testimony.

Daubert, and the Third Circuit in Paoli, announced factors for courts to consider in determining whether to admit expert testimony. These factors include:

> (1) whether a method consists of a testable hypothesis; (2) whether the method has been subject to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; and (8) the non-judicial uses to which the method has been put.

Paoli, 35 F.3d at 742 n.8. This list is "non-exclusive" and "each factor need not be applied in every case." Elcock, 233 F.3d at 746. Rather, the court must tailor its inquiry to the facts of each case and "should consider the specific factors identified in Daubert where they are reasonable measures of the reliability of expert testimony." Kumho Tire, 526 U.S. at 152; see also id. at 150 (noting that the Daubert factors may or may not be useful depending on the "nature of the issue, the expert's particular expertise, and the subject of his testimony") (citation omitted). The proponent of expert testimony must establish the admissibility of the expert's opinion by a preponderance of the evidence. Paoli, 35 F.3d at 744.

In considering the reliability of an expert's testimony, the court's inquiry must be based

"solely on principles and methodology, not on the conclusions that they generate." Daubert, 509 U.S. at 595. But "conclusions and methodology are not entirely distinct from one another." General Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997). The Supreme Court has emphasized that

> nothing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.

Id.

Still, an expert's testimony need not be flawless for it to be reliable and admissible. As the Third Circuit recognized in Paoli,

> [t]he grounds for the expert's opinion merely have to be good, they do not have to be perfect. The judge might think that there are good grounds for an expert's conclusion even if the judge thinks that there are better grounds for some alternative conclusion, and even if the judge thinks that a scientist's methodology has some flaws such that if they had been corrected, the scientist would have reached a different result.

Paoli, 35 F.3d at 744. The court's role as a gatekeeper, moreover, "is not intended to serve as a replacement for the adversary system." Fed. R. Evid. 702, advisory committee's note (quoting U.S. v. 14.38 Acres of Land, More or Less Situated in Leflore County, State of Miss., 80 F.3d 1074 (5th Cir. 1996)). As Daubert notes, "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." Daubert, 509 U.S. at 596.

Daubert's general holding applies not only to scientific knowledge but to technical and other specialized knowledge as well. Kumho Tire, 526 U.S. at 149. But the Daubert factors may not necessarily or exclusively apply to all experts in every given case: "[T]he Daubert factors do not always fit neatly into or easily translate in the context of nonscientific testimony." Voilas v. General Motors Corp., 73 F. Supp. 2d 452, 461 (D.N.J. 1999). "Indeed, the inquiry into an

expert's reliability may focus instead upon personal knowledge or experience." Crowley v. Chait, 322 F. Supp. 2d 530, 536 (D.N.J. 2004) (citing Kumho Tire, 526 U.S. at 150); see also Voilas, 73 F. Supp. 2d at 461 (observing that, in this nonscientific context, "the qualifications of the expert will be of particular importance. This is so because in the nonscientific world, theories are often not subject to testing or experimentation. Although the focus of the inquiry must still be on verification of the expert's methodology, the inquiry is more difficult because much nonscientific expert testimony is based on the experience of the expert, instead of the experimentation.") (quoting Timothy Perrin, *Expert Witness Testimony: Back to the Future*, 29 U. Rich. L. Rev. 1389, 1457 (1995)).

B. The Daubert Hearing

For Daubert motions, at the outset, the Court must determine, pursuant to Federal Rule of Evidence 104(a), "whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue." Daubert, 509 U.S. at 592. The Third Circuit has "long stressed the importance of in limine hearings under Rule 104(a) in making the reliability determination required under Rule 702 and Daubert." Padillas v. Stork-Gamco, Inc., 186 F.3d 412, 417 (3d Cir. 1999). The concern in holding such a hearing is that "[a] detailed factual record is required at the evidentiary stage, particularly when a summary judgment may result." Hines v. Consolidated Rail Corp., 926 F.2d 262, 272 (3d Cir. 1991). "It is particularly important that the party defending the admissibility of evidence be given adequate chance to do so." Crowley, 322 F. Supp. 2d at 537 (citing Paoli, 35 F.3d at 739). The proponent bears the burden of establishing admissibility by a preponderance of the evidence. Daubert, 509 U.S. at 592 n.10. Still, an in limine hearing is not required in all cases in which a Daubert

objection is raised to a proffer of expert evidence. Padillas, 186 F.3d at 418.

Here, not only was a hearing appropriate, but The Third Circuit's concern that the Court be furnished with an adequate factual record upon which to base its conclusions has been more than adequately met. In this case, both the Daubert and Summary Judgment Motions–of both sides–have been extensively briefed and accompanied by volumes of appendices. It is based on the record elucidated at the hearing and through the parties' ample submissions that this Court has determined that four of MTI's expert witnesses must be precluded from testifying at trial.

C. The Experts

1. Dr. Alan Lawley

a. Proposed Testimony

Dr. Alan Lawley's ("Dr. Lawley" or "Lawley") services were retained by MTI to report on and testify to: (1) the "nature, history and limitations of conventional powder metals and powder metallurgy in general;" (2) "the results obtained in the testing of material made from stainless steel metal powders produced pursuant to the Scanpac technology;" and (3) "the implications of the test results on the potential scope of the Scanpac technology vis a vis conventional wrought metal products." JA 193, Expert Report of Alan Lawley ("Lawley Report") at 1.

Dr. Lawley's expert report reaches the following conclusions:

(1) Powder metallurgy ("P/M") is a demonstrated metal forming technology for the fabrication of parts and components.

(2) To date, P/M stainless steel products have experienced limited penetration vis a vis wrought counterpart materials due to limitations in P/M technology.

(3) The mechanical properties and corrosion resistance of Scanpac 316L

> stainless steel products can match or exceed those of equivalent wrought products and meet (or can be expected to meet) pertinent ASTM[3] standard specifications.
>
> (4) Scanpac 316L stainless steel powders will permit a significant expansion in net shape parts which are technically equivalent to current products, specifically fittings, valves and flanges, as monitored by applicable ASTM and ASME standard specifications.

Lawley Report at 4 (footnote added). In order to test his hypotheses–about the equivalence (or superiority) of Scanpac stainless steel to wrought stainless steel–Lawley carried out a test program on 316L stainless steel fabricated by the Scanpac process. Id. at 7. "In scope, the test program embraced composition, density, microstructure, mechanical properties and corrosion response." Id. Lawley purports that all testing was conducted in accordance with pertinent ASTM/MPIF[4] standards. Id. Carpenter's Motion primarily challenges the reliability of Dr. Lawley's third and fourth conclusions. Defendants' Memorandum of Law in Support of Motion to Preclude Plaintiffs' Experts ("Defs.' Supp. Mem.") at 8.

b. Qualifications

It is undisputed that Dr. Lawley is a highly experienced professional in the field of powder metallurgy, a field in which he has attained a number of impressive achievements. See

---

[3] "ASTM" stands for the American Society for Testing and Materials. ASTM consensus standards serve as the basis for many manufacturing, procurement, and regulatory activities. ASTM standards are generally accepted and used in research and development, product testing, quality systems, and commercial transactions. See ASTM International, http://www.astm.org (last visited May 25, 2005). "ASME," mentioned below, stands for the American Society of Mechanical Engineers. ASME, as well, sets many industrial and manufacturing standards. See The American Society of Mechanical Engineers, http://www.asme.org (last visited May 25, 2005).

[4] "MPIF" stands for the Metal Powder Industries Federation, which is billed as "[t]he International Trade Association Representing the World's Leading P/M and Particulate Materials Companies." MPIF, http://www.mpif.org (last visited June 2, 2005).

Defendants' Reply in Support of Motion to Preclude ("Defs.' Reply") at 2. He is a respected Professor of Metallurgy at Drexel University and has over three decades of experience in powder metallurgy and interaction with the powder metallurgy industry. Plaintiffs' Memorandum of Law in Opposition to Defendants' Motion ("Plts.' Opp'n") at 3. It is well settled, however, that "the testimony of a witness, who is well qualified by experience, still may be barred if it is not based on sound data." Montgomery County v. Microvote Corp., 320 F.3d 440, 448 (3d Cir. 2003). Thus, the Court must look beyond Dr. Lawley's qualifications to the data and methodology supporting his proposed testimony.

c. Methodology

Carpenter's objections to Dr. Lawley's testimony focus primarily on the professor's methodology for testing the viability of Scanpac powder for commercial applications. Carpenter argues that there two general problems with Lawley's methods: (1) Lawley's standards of measurement and comparison are subjective; and (2) Lawley cherry picked favorable results to support his conclusions, while disregarding unfavorable ones.

The Court will first address subjectivity argument: More specifically, Carpenter argues that ASTM standards are not an accurate measure of Scanpac's appropriateness as a replacement for wrought steel and that without an understanding and accounting for objective industry standards and requirements, Lawley cannot opine on Scanpac's commercial prospects. See Defs.' Supp. Mem. at 8.

If, as Carpenter contends, the requirements for MTI's top two potential customers of Scanpac parts, Parker Hannifin and Swagelok, are more stringent or qualitatively different from ASTM standards, than performance on ASTM standards is, per se, an insufficient basis for

Lawley's third and fourth conclusions. Id. at 8; PCSCMFC ¶30. Indeed, in a revealing colloquy focused on Lawley's "Mechanical Properties: Tensile Response"[5] data, Lawley admits the limitations of testing against ASTM standards alone, where, as here, the materials being tested are intended for particular commercial applications:

> Q. [Mr. Wolfson, for Carpenter] Let me ask you to go up to the paragraph immediately above the data table [Table I: Tensile data–Scanpac 316L Stainless Steel], the one beginning, "These property levels exceed [those cited for wrought annealed 316L stainless steel in ASTM A182, ASTM A479, ASTM A666 and ASTM A988]." ...
> ...
> Q. In the last sentence [of that paragraph] you cited the specific property level requirements for ASTM A479. Do you see that?
> A. [Lawley] Yes, I do.
> Q. Would you agree with me that generally in the commercial marketplace when specifications refer to A479 those levels are minimum requirements?
> ...
> A. Typically *in many ASTM standards* they do quote minimum levels.
> ...
> Q. Have you done any investigation to determine what the upper limit of those specified minimum requirements may be in the marketplace?
> ...
> A. [For ASTM 479] I would not be privy to what a particular company is asking for above and beyond the particular ASTM specification.
> Q. Sir, if you don't know, you don't know. I'm just asking.
> A. The answer is no.

JA 183, Deposition of Alan Lawley ("Lawley Dep.") at 162-64 (emphasis added) (objection to form and comments by Mr. Katich, for Plaintiffs, omitted). In this colloquy, Lawley admits that many ASTM standards quote minimum levels of the properties they measure and that, at least with respect to ASTM A479, Dr. Lawley cannot opine on whether Scanpac would meet industry requirements, when these requirements exceed ASTM minimums. Tellingly, Dr. Lawley admits

[5] Lawley's report explains that "[t]he tensile test gives a quantitative assessment of the response of a material to static loading in tension in terms of strength and ductility." Lawley Report at 8.

to a lack of knowledge of industry requirements that deviate from the ASTM standards throughout his deposition testimony. See Lawley Dep. at 92-93 (admitting that Scanpac stainless 316L would not be appropriate for Swagelok or Parker Hannifin parts that require "zero delta ferrite," *i.e.*, are a non-magnetic material); see also id. at 123-24 (admitting that he did not analyze whether Scanpac 316L can meet the dimensional requirements for Parker Hannifin or Swagelok parts, *i.e.*, whether Scanpac stainless steel can be machined to satisfy these requirements); see also id. at 242-45 (admitting that he did not analyze whether there are applications for wrought 316L stainless steel that would be unsuitable for Scanpac because–while both the wrought and Scanpac samples failed to meet ASTM G31 standards–Scanpac was 50% more corrosive than wrought on that test).

Further, to the extent that Lawley's opinion of the flexibility of the technology is intended to replace knowledge of specific industry requirements, it is insufficiently grounded in explanation or data. In particular, the Lawley Report concludes with the statement that

> [b]ased on metallurgical principles and the equivalence, or superiority, of 316L Scanpac steel, to wrought 316L stainless steel, options exist for achieving different combinations of mechanical properties and corrosion resistance ....
> ...
> ... Scanpac technology can be applied to other stainless steel compositions, cobalt-base and nickel-base specialty alloys ... [which] ... will exhibit property levels equal, or superior, to the counterpart wrought alloys.

Lawley Report at 17; see also id. at 5 (stating that, while "parts made by pressing and sintering require no further treatment," "properties, tolerances and surface finish can be enhanced by secondary operations, if necessary," such as "repressing, resintering, machining, heat treatment, and carious surface treatments such as deburring, plating, and sealing"). Dr. Lawley's investigation, however, did not include testing of Scanpac with respect to *any* of these "different

combinations," other compositions or secondary operations.

Faced with Lawley's lack of familiarity with industry requirements, MTI argues, futilely, that "the only generally recognized 'industry standards' subscribed to uniformly by every powder customer are the ASTM, ASME, and MPIF standards," and that "the 'actual marketplace requirements' of which Dr. Lawley allegedly was unaware ... [pertain to] individual customers within the industry [which] may have unique requirements **for specific applications** above and beyond those ... ." Pls.' Opp'n at 9. In sum, MTI suggests that Dr. Lawley's ignorance of specific customers' requirements "establishes nothing." Id.

To the contrary, however, it appears to the Court that it is impossible for Lawley to opine on the suitability of Scanpac for specific applications–the very "equivalent wrought products" and "net shape parts . . . specifically fittings, valves and flanges" to which he refers in his expert report–without a basis for comparing Scanpac to actual "equivalent" parts in the marketplace. See Lawley Report at 4. To the extent that real parts in the marketplace exhibit, and in some cases require, performance that exceeds or is qualitatively different from ASTM standards, Lawley has insufficient data to support his third and fourth conclusions.

Despite MTI's contention that Dr. Lawley's test matrix "embraced important static and dynamic mechanical properties, and corrosion characteristics," in a case such as this–where Plaintiff alleges the loss of particular contracts, with particular manufacturers,[6] of particular parts, that, undoubtedly, have particular requirements–merely proving minimum performance levels on a general battery of "important properties" is inadequate. See Pls.' Opp'n at 9; see also *infra*, n.10 (discussing the relevance of industry requirements in the context of this case). Indeed,

[6] MTI's alleged damages are premised primarily on lost business from Swagelok and Parker Hannifin. See PCSCMFC ¶¶ 30, 106.

without a more tailored study including the properties and consumer requirements of allegedly "equivalent" parts, Lawley's opinion that Scanpac 316L stainless steel can replace wrought presents itself as Lawley's own "ipse dixit." Oddi, 234 F.3d at 158; see also Ebenhoech v. Koppers Indus., Inc., 239 F. Supp. 2d 455, 469 (D.N.J. 2002) ("As a net opinion, the report is supported only by the personal view of its author, and not by reliable, verifiable methodology pertaining to the product at issue here.").

While the aforementioned problems provide reason enough to exclude Dr. Lawley's opinion under Daubert, at least with respect to his third and fourth conclusions, Carpenter raises several other serious issues with Lawley's methodology. Carpenter argues next, that not only are ASTM standards alone inapposite to Dr. Lawley's conclusions, but also, the favorable results of the tests purportedly conducted under these standards were improperly "cherry picked," and worse, in some instances, entire tests were conducted improperly.

The Court is particularly troubled by Dr. Lawley's admitted decision to completely disregard the unfavorable results of tests conducted at Westmoreland Mechanical Testing, Inc. ("Westmoreland"). Dr. Lawley arranged for separate tests to be run on Scanpac samples by independent laboratories, Westmoreland and Matco Associates, Inc., ("Matco"). See Lawley Dep. at 219-22. Dr. Lawley acknowledged that the results obtained from Westmoreland, for corrosion resistance tests performed on Scanpac stainless steel, relating to ASTM A262, Practice C, and ASTM G48 were unfavorable: Scanpac did not meet the requirements for the respective standards. Id. at 226, 234-36. The tests conducted at Matco, however, yielded favorable results. See Id. at 222-23. Lawley testified, further, that he had no reason to believe that the Westmoreland results were invalid. Id. at 225. He acknowledged Westmoreland certified that it

ran the tests of Scanpac correctly, and also testified that he assumed Westmoreland did, in fact, perform the tests of Scanpac correctly and obtained valid results. Lawley Dep. at 225, 235. Despite this Dr. Lawley completely discounted the negative results from Westmoreland in forming his opinion about Scanpac.

At his deposition, and in a subsequent Declaration, Dr. Lawley offered a number of reasons why he ignored the Westmoreland results. First, he claimed that there is a battery of tests that he wanted performed that the Westmoreland lab was unequipped to perform. Pls.' Opp'n at 4. Lawley has sworn that one such test, a "critical pitting temperature corrosion test," or "CPT" test, was available through Matco, but not Westmoreland. Id. at 4. This explanation satisfies the Court that Dr. Lawley sought the Matco tests for legitimate reasons, but it fails to explain why the Westmoreland tests, which had been satisfactorily completed, were never reconciled with conflicting results from Matco and were unaccounted for in Dr. Lawley's report.[7]

---

[7] Carpenter argues that this explanation should be disregarded entirely because the "CPT test" is not the typical screening test for 316L stainless steel such as Scanpac. Carpenter refers the Court to the ASTM standards, wherein ASTM A262 states that "Practice A" provides the "most appropriate of several test methods available for the evaluation of specific grades of stainless steel." See Defs.' Reply at 3 (citing Designation: A 262-02a, Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels ("ASTM A262 ") at 8 n.9). The relevant ASTM standard provides that

> [t]he boiling nitric acid test [ASTM A262, Practice C] should not be used for extra-low-carbon molybdenum-bearing grades unless the material tested is to be used in nitric acid service. See Practice A, Oxalic Acid Etching Test, for information on the most appropriate of the several test methods available for the evaluation of specific grades of stainless steel.

JA 201, ASTM A262 at 8 n.9. Certainly, ASTM standards are not drafted for lay readers, but here, where it is undisputed that Scanpac stainless steel is an "extra-low-carbon" grade, see ASTM A262 at 2, ¶3.4, it is indisputable that Practice C is not the standard test for materials that are not intended for "use[] in nitric acid service." At oral argument, it was undisputed that Scanpac is not a material that is intended for use "use[] in nitric acid service." Thus, while the court need not rely on this evidence to find Dr. Lawley's opinion unreliable, when considered with the totality of the evidence it provides further support for the courts decision.

Second, Lawley claims that he discounted the Westmoreland tests because they were conducted without a wrought comparator, as opposed to the Matco tests which were conducted on both Scanpac and wrought stainless steel (both in an annealed state). Plts.' Opp'n at 4. The deficiency of this explanation is twofold: (1) testing under ASTM standard procedures does not require a comparator, see Plts.' Opp'n at 6; and (2), even if a comparator were necessary under ASTM standard testing procedures, the tests conducted at Matco deviated from ASTM standards in other important respects. See Defs.' Supp. Mem. at 10.

More specifically on this second point, it is undisputed that Matco conducted its tests on unsensitized samples of grade 316L Scanpac and wrought stainless steel. See Plts.' Opp'n at 5. However, ASTM A262 states in unambiguous terms that test samples of grade 316L stainless steel must be "sensitized," that is heat treated, before Practice A, C, and E tests can be properly conducted. See, e.g., ASTM A262 at 2, ¶3.4; see also id. at 8, ¶15.3. The standard protocol for ASTM A262 also explains why this grade of material must be sensitized: Under Practice C, for example, which Matco conducted on unsensitized steel, it is explained that "[t]he length of time used for this sensitizing treatment determines the maximum permissible corrosion rate in the nitric acid test." See ASTM 262A at 8, ¶15.3.[8] Ultimately, given that Dr. Lawley admits that the Westmoreland tests were conducted properly, and given that the Matco tests, in contrast, were erroneously conducted on unsensitized samples, Lawley's proffered explanations–that he

[8] MTI appears to have engaged in creative quotation from ASTM A262 by citing only the first part of Practice C at 8, ¶15.2. See Pls.' Opp'n at 5. Paragraph 15.2 states that "[t]he boiling nitric acid test may be used to evaluate the heat treatment accorded 'as-received' material." ASTM A262 at 8, ¶15.2. But Practice C goes on, just one paragraph later, to state unequivocally that "[s]pecimens of extra-low-carbon and stabilized grades, [defined at 2, ¶3.4 to include grade 316L] are tested after *sensitizing* heat treatments ... ." Id. at 8, ¶15.3 (emphasis added). MTI omitted the latter portion of Practice C from its quotation of the standard. See Plts.' Opp'n at 5.

disregarded the Westmoreland tests in favor of Matco because the Matco samples were "annealed" and/or because they included a wrought comparator–frankly, fail to comport with the undisputed facts, strain the Court's credulity and raise serious doubts about the reliability of Lawley's opinions.

But lest the Court delve too deeply into the scientific language of ASTM A262, Lawley himself testified that he would be reluctant to submit his findings–with their failure to reconcile the results of Westmoreland and Matco–to peer review. Dr Lawley's testimony in this regard speaks for itself:

> Q. [Mr. Wolfson, for Carpenter] In your career as an academician, if you were performing tests ... and you received widely disparate results for the same tests, would you ignore one and rely on the other for purpose of a peer reviewed paper or would you try to reconcile the tests to determine what was going on?
>
> A. [Dr. Lawley] Clearly I would try to establish consistency in test results.
>
> Q. You did not do that with respect to the Westmoreland and Matco test for Practice C of A262, did you?
>
> ...
>
> A. We did it with Matco by the use of a comparator wrought standard.
>
> Q. My question, sir, is: Did you try to establish the consistency of the test results after you received that?
>
> A. I could see no way to reconcile one set of data with the other.
>
> ...
>
> Q. If you were working as an academician on a project for the purposes of... creating a paper for peer review ... would you continue to work on a project [with widely disparate results on the same test] to try to reconcile or re-do the tests?
>
> A. Yes.
>
> Q. Did you do that in this case?
>
> A. No, I did not. If you go back to my report, page 12–
>
> ...
>
> – the section "Corrosion Resistance" . . . we considered the corrosion testing at Westmoreland to be corrosion trials in that we did not have a comparator wrought material. And then as you see, the salt fog test was passed satisfactorily. The ASTM A262, Practice E was practiced – came out satisfactorily.
>
> Q. At Westmoreland?
>
> A. At Westmoreland, yes.
>
> Q. So if all those tests from Westmoreland were satisfactory, you relied on those, why wouldn't you rely on Westmoreland's tests that gave you bad corrosion

resistance results?
...
A. These corrosion rates were so high that it was my feeling that there had to be something wrong somewhere.
Q. You didn't have them re-run, did you?
A. No, we did not.
Q. Which is what you would have done if it was an academic endeavor for purposes of seeking peer review of your paper, right?
...
A. Yes, I would.

Lawley Dep. at 228-32 (objections omitted). In so many words, Dr. Lawley testified that his disregard of negative results from the Westmoreland lab is good enough for government work but not something that he would submit for peer review.[9] Faced with this admission, MTI argues that Daubert does not require that expert findings be peer reviewed, only that they are supported by data. True as it is, the argument is inapposite: The fact that Dr. Lawley would not permit these findings to be peer reviewed tells the Court that he does not have faith in his own methodology, and signals the Court that his opinion is unreliable. See Group Health Plan, Inc. v. Philip Morris USA, Inc., 344 F.3d 753, 760 (8th Cir. 2003) (requiring that "when experts testify in court they must adhere to the same standards of intellectual rigor that are demanded in their professional work.") (citation omitted).

The decision about "how to test an expert's reliability" is best left to the district court's discretion. Kumho Tire, 526 U.S. at 152. This Court has detailed a number of freestanding issues with Lawley's methodology–Plaintiff argues that these issues only implicate a small sample of the tests conducted by Dr. Lawley. While any one of the methodological problems

[9] These comments were retracted in the Declaration of Alan Lawley ¶11, but it is the Court's opinion that this later Declaration is no substitute for candid admissions at Deposition. See Seshadri v. Kasraian, 130 F.3d 798, 801 (7th Cir. 1997) (noting that "[w]hen a party makes damaging admissions in his deposition and then tries to retract them in an affidavit, courts give short shrift to the affidavit.").

discussed above, if standing alone, might not indicate that Dr. Lawley's methodology was unreliable, when taken together, these methodological problems are sufficiently serious to cast doubt on the reliability of Dr. Lawley's testimony in toto. For these reasons, Defendant's motion to preclude to Dr. Lawley's testimony is granted.

2. Richard Philips

a. Proposed Testimony

Richard Phillips's ("Phillips") services were retained by MTI to (1) determine and report on "the manufactureability [sic] of Scanpac stainless steel and other high alloy iron (10% chromium or greater), nickel and cobalt base alloy powder into metal components;" (2) "to determine the manufacturing cost of using Scanpac 316L stainless steel powder to produce powder metal components;" and (3) "under the direction of Alan Lawley, to use [Phillips's own] facilities at Engineered Pressed Materials to manufacture powder metal test components using standard Scanpac 316L stainless steel powder metal." Phillips Report at 2.

Phillips's expert report reaches the following conclusions:

> 1) Scanpac 316L stainless steel and other high alloy iron (10% chromium or greater), nickel, and cobalt base alloy powders can be commercially manufactured into industrial and commercial components via conventional powder metallurgical methods; and
>
> 2) the products manufactured by Scanpac 316L stainless steel and other high alloy iron (10% chromium or greater), nickel, and cobalt base alloy powders are significantly lower in cost than most machined, cast, or fabricated products made from wrought, forged, or cast alloys.

Id. at 4. In order test his hypotheses, Phillips "evaluated thirty-nine (39) different fitting and valve components representing forty-seven (47) line items." Id. at 3; see also id.,Table One (identifying twenty (20) parts that are currently being made from wrought by Parker Hannifin and

Swagelok, MTI's alleged top two potential customers, that Phillips opines could be made from Scanpac).

b. Qualifications

Richard Phillips is a metallurgical engineer and owner of Engineered Pressed Materials. Phillips Report at 1. Phillips's expert qualifications are undisputed. See PA 129, email from D. Christiansen to I. Friedman, dated September 8, 2000 (extolling the expertise of Mr. Phillips).

c. Other Factors Bearing on Admissibility

The first issue raised by Carpenter is whether Phillips's testimony is premised upon Dr. Lawley's unreliable findings. Indeed, the Phillips Report cites Dr. Lawley for the proposition that "Scanpac 316L stainless steel and other high alloy iron (10% chromium or greater), nickel and cobalt base alloy powders *yields mechanical, chemical and physical properties equal to or superior to products manufactured from wrought alloys*." Id. at 8 n.7 (emphasis added). This proposition, appearing twice in the body of the Phillips Report, is not presented as one of Phillips's two "conclusions." See also Phillips Report at 3 (stating same). This makes some sense since Phillips did not undertake to compare the properties of his finished Scanpac parts to the properties of currently manufactured wrought parts. Nor does Phillips implicitly rely on Lawley's findings: Even if Phillips's theoretical Scanpac parts are ultimately worthless because their properties fail to match or exceed those of wrought parts, his cost of manufacture and asking price for the parts could remain the same.

Relatedly, Carpenter suggests that the Phillips report based on insufficient data even if Phillips does not rely on Lawley, insofar as Phillips opines on the cost of parts intended to replace Parker Hannifin and Swagelok parts, but failed to determine the requirements of those

firms. Defs.' Supp. Mem. at 18; Defs.' Reply at 10. In response, MTI maintains that "[a]s an expert for plaintiffs, Mr. Phillips acted in the capacity of a toll converter," (one who for a fee fabricates parts to weight, dimension and configurations identified by the customer). See Plts.' Opp'n at 13. Conducting his research for this case in the capacity of a toll converter, thus, Phillips had no need to know the ultimate requirements of MTI's hypothetical clients. Id. (citing Declaration of Richard Phillips ("Phillips Decl.") ¶9).

Taking MTI's position at face value, it appears to the Court that the admissibility of Phillips's testimony may be less an issue of his data and more an issue of relevance. Federal Rule of Evidence 702 provides, that where

> scientific, technical, or other specialized knowledge *will assist the trier of fact to understand the evidence or to determine a fact in issue*, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise[,]

Fed. R. Evid. 702–and as Daubert further explains,

> [e]xpert testimony which does not relate to any issue in the case is not relevant and, ergo, non-helpful. ... The consideration has been aptly described by Judge Becker as one of "fit." "Fit" is not always obvious, and scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes. The study of the phases of the moon, for example, may provide valid scientific "knowledge" about whether a certain night was dark, and if darkness is a fact in issue, the knowledge will assist the trier of fact. However (absent creditable grounds supporting such a link), evidence that the moon was full on a certain night will not assist the trier of fact in determining whether an individual was unusually likely to have behaved irrationally on that night. Rule 702's "helpfulness" standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility.

Daubert, 509 U.S. at 591-92 (citations omitted) (citing, *inter alia*, United States v. Downing, 753 F.2d 1224, 1242 (3d. Cir. 1985)). Of course, the expert need not have an opinion on the ultimate question to be resolved by the trier of fact in order to satisfy this requirement–the idea is that an expert's opinion can be linked to a question that is before the trier of fact. See Smith v. Ford

Motor Co., 215 F.3d 713, 718 (7th Cir. 2000).

Here, Phillips's testimony may provide valid scientific "knowledge" about whether Scanpac can be made into parts of the same weight, dimension and configurations as particular Parker Hannifin and Swagelok parts. The problem is that, in this case, the manufacturability of Scanpac parts are not facts in issue. Carpenter does not dispute that Scanpac can be made into parts of the same weight, dimension and configurations of Parker Hannifin and Swagelok parts. The real fact in issue here–and the reason Phillips's testimony is offered at all–is MTI's alleged damages. It is indisputable, moreover, that unless Scanpac parts meet the specific requirements of parts customers they cannot claim to have lost those customers.[10] Critically, neither Parker Hannifin nor Swagelok's requirements, nor any other potential customer for that matter, are

---

[10] Oddly enough, MTI does attempt to dispute this, arguing that while the "properties" of wrought parts might be considered relevant, the "requirements" of wrought parts consumers are a different, indeterminable and ultimately irrelevant question. See Plts.' Opp'n at 13. As explained above, MTI's argument makes sense only if lost business were not a key component of MTI's alleged damages.

Remarkably, MTI admitted the relevance of customer requirements at oral argument, citing a recent Joint Development Agreement between MTI and Parker Hannifin ("JDA") for the development of Scanpac parts. See Transcript of Daubert Proceedings, May 17, 2005 ("Transcript") at 102:16-23. The JDA states unequivocally that the parties must initially "determine which Parker Hannifin Products can be made by the P/M process." See id. at 16. Next, the JDA continues, the parties must "identify P/M materials and processing which can provide the physical and corrosion properties *required* by these products." Id. (emphasis added).

In point of fact, the MTI/Parker JDA details additional testing requirements to determine whether Scanpac is suitable for Parker Hannifin parts: These include, at minimum, testing for mechanical strength such as porosity, tensile and impact properties, corrosion testing such as Ferric Chloride, Salt Spray, and CPT testing, as well as chemical composition analysis, and analysis of microstructure and hardness of cross-sections. Id. at 16-18.

MTI stresses the fact that Parker's "requirements" are nothing more than running the standard ASTM tests. Transcript at 102:16-23. But MTI misses the point: The point is that MTI's JDA with Parker Hannifin clearly requires that Scanpac achieve *specific performance levels* on those standard ASTM tests. At bottom, both Parker Hannifin and MTI understand that the viability of Scanpac parts depends on whether they meet Parker Hannifin's specified performance measures–performance that is unproven by Lawley, untested by Phillips, and demonstrated nowhere in the evidence before the Court.

accounted for in the Phillips Report. The relative properties of the wrought and Scanpac parts that are listed in Table One of the Phillips Report were accessible by Phillips, see Phillips Dep. at 128-29, 429. But Phillips did not consider them. See id. Nor, for the reasons discussed above, do Lawley's findings provide "credible grounds" that would link Phillips's findings to facts in issue–namely, MTI's potential damages.[11] Phillips's proposed testimony is, therefore, irrelevant to the damages issue and is not linked to that issue by any other admissible evidence. Thus, to the extent it is offered as evidence of damages, Phillips's proposed testimony would not be helpful to the jury and must be excluded under Daubert.

Of course, even assuming, arguendo, that Phillips's conclusions regarding manufacturability are relevant, his cost estimates remain inadmissible under Daubert because he omits important, supporting calculations. See Phillips Dep. at 507-08; Phillips Report, Table One. Faced with this issue, MTI directs the Court's attention to "pages 9 and 10 of [Phillips's] Report, [where] he sets forth in detail the assumptions he made to determine the prices to be charged to toll convert the parts." Plts.' Opp'n at 16. These "assumptions" are,

1) a material price of $1.80 per pound for Scanpac 316L stainless steel powder;
2) lot sizes of 50,000 pieces;
3) four percent (4%) of parts would be scrapped;
4) tool amortization over 200,000 pieces;
5) standard stainless steel P/M processing burdens;
6) selling and general administration costs; and
7) and profit of thirty-five (35) percent.

Phillips Report at 9. It is undisputed that Phillips's formula for determining toll conversion prices comprises these variables and constants. The Phillips Report sets forth, further, the

[11] See, *infra*, n.14 (discussing the relevance of Dr. Christer Aslund's work, which is cited in the Phillips Report at 5 n.1).

various sources for his costing methodology. Id. at 8-9.

Nowhere, however, does Phillips disclose the calculations that show how he applied his formula–in other words, he doesn't disclose the numbers he plugged-in or from where he derived those numbers. Phillips was also unable to provide these calculations at his deposition. See Phillips Dep. at 478-507. While MTI's Opposition walks through the steps of the Phillips formula, see Plts.' Opp'n at 16-19, the order of operations disclosed does not stand in for the missing calculations.

As Kumho Tire points out, the task of the District Court in evaluating expert testimony under the guidelines of Daubert, is not to evaluate "the reasonableness *in general*" of an expert's methodology, but rather to evaluate

> the reasonableness of using such an approach, along with the [expert's] *particular method of analyzing the data thereby obtained, to draw a conclusion regarding the particular matter to which the expert testimony is directly relevant.*
> ...
> [N]othing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.

Kumho Tire, 526 U.S. at 153-54, 157 (emphasis added) (citations omitted); see also Heller v. Shaw Industries, Inc.,167 F.3d 146, 152 (3d Cir. 1999) ("[A]n expert opinion must be based on reliable methodology and must reliably flow from that methodology and the facts at issue ...").

Here, the Court is left unable to review Phillips's determination of any variable that is part-specific. It is impossible for the Court to evaluate the application of Phillips's methodology without access to his actual calculations.[12] Thus, even if his conclusions were relevant, and his

[12] In further support of the proposition that the application of methodology is as relevant as the methodology itself, Kumho Tire cites to the Advisory Committee's Note on proposed Fed. Rule Evid. 702, Preliminary Draft of Proposed Amendments to the Federal Rules of Civil Procedure and Evidence: Request for Comment 126 (1988), which stresses that district courts

methodology reliable, Mr. Phillips's proffered testimony must still be excluded because of his failure to maintain or produce the data showing how it was applied to the facts of this case.[13] For all of these reasons, Carpenter's motion with respect to Richard R. Phillips is granted.

3. Ralph Hershberger

a. Proposed Testimony

Ralph Hershberger's services were retained by MTI to "describe the process and the factors that a producer of metal parts uses to select between alternative manufacturing methods." JA192, Expert Report of Ralph Hershberger ("Hershberger Report") at 2. Hershberger's expert report reaches the following conclusions,

1. For applications that do not require extensive testing and certification (non-critical applications), market penetration [of Scanpac parts] will approach 20% by the end of year two. Conversion for applications that require more extensive testing (critical applications) may not occur until year three. Hershberger Report at 13; and

2. "The effective penetration rate is a blended rate of the non-critical and critical (certified) applications. The effective penetration rate can be expected to jump from 10 to 15% at the end of year two to 50 to 60% by the end of year five." Id.

Hershberger's analysis purportedly "draws on case histories of applications when end users or buyers of parts have selected those manufactured by powder metallurgy." Id. at 2. Carpenter seeks to preclude Hershberger's testimony on four principle grounds: (1) his reliance on the opinions of Dr. Lawley and Mr. Phillips; (2) the sufficiency of his data; (3) the reliability of his data; and (4) his

---

must "scrutinize" whether the "principles and methods" employed by an expert "have been properly applied to the facts of the case." Kumho Tire, 526 U.S. at 157. .

[13] Carpenter also takes issue with Phillips's handing of his sample "green rings," which are the fragile samples of pressed Scanpac parts that were sent off for testing. Carpenter maintains that Phillips's samples were carelessly handled and destroyed, preventing Defendants from conducting their own testing on the samples. For the reasons above however, Phillips's opinion would be inadmissible regardless of whether Carpenter had access the samples, and the Court need not reach this issue.

alleged destruction of back-up materials.

b. Qualifications

Ralph Hershberger was a materials consultant d.b.a TBS Group Inc until 2003. Plts.' Opp'n at 22. He has a B.S. in Metallurgy and Materials Science from Carnegie-Mellon University and an MBA from the Wharton School of the University of Pennsylvania. Id. In 1983, he joined Hoeganaes Corporation, the largest manufacturer of Iron and low alloy steel and a major producer of water atomized stainless steel powders in North America. Id. Carpenter does not challenge Hershberger's qualifications. Defs.' Reply at 14.

c. Other Factors Bearing on Admissibility

I. Reliance on Lawley and Phillips

At the outset, there is the question of whether Hershberger's opinion about the potential market for Scanpac relies on the opinions of Lawley and Phillips. Critically, for the purposes of his report, Hershberger was "instructed to assume that Scanpac meets or exceeds the mechanical properties and corrosion resistance of competitive wrought alternatives." Hershberger Report at 2. A hypothetical fact that is relied on in an expert's opinion must be based on facts that have at least some evidentiary support–and here, Lawley's opinion and conclusion to this effect is inadmissible because, among other things, it is not sufficiently reliable. See, e.g., Toucet v. Mar. Overseas Corp., 991 F.2d 5, 10 (1st Cir. 1993) ("a hypothetical should include only those facts supported by the evidence"); Iconco v. Jensen Constr. Co., 622 F.2d 1291, 1301 (8th Cir. 1980) (same); Newman v. Hy-Way Heat Sys., Inc., 789 F.2d 269, 270 (4th Cir. 1986) ("It is fixed law that 'an expert can give his opinion on the basis of hypothetical facts, but ... nothing in the Rules appears to have been intended to permit experts to speculate in fashions unsupported by ... the uncontroverted evidence ...."); 29 Wright and Miller, Fed. Prac. & Proc. Evid. R 702

(1997, Supp. 2005) ("... Rule 702 ... requires that expert testimony be based on sufficient underlying 'facts or data.' The term 'data' is intended to encompass the reliable opinions of other experts. ... The language 'facts or data' is broad enough to allow an expert to rely on hypothetical facts *that are supported by the evidence*. Id.") (emphasis added). Ultimately, there is no evidentiary support for the hypothetical assumption that "Scanpac meets or exceeds the mechanical properties and corrosion resistance of competitive wrought alternatives." See Hershberger Report at 2.

Hershberger also admitted that his opinion depends on assumptions from the Phillips report. To wit, his opinion of potential market penetration would change if Scanpac fails to meet the requirements of some or all of the parts identified by Mr. Phillips:

> Q: [Mr. Wolfson, for Carpenter] Do you have any understanding, as you sit here now, as to whether Scanpac powder can meet the required tolerances for any of the applications you assume it will be appropriate for in this matter?
> A: [Mr. Hershberger] Yes.
> Q: Which applications?
> A: I would refer to Mr. Phillips' report again where he quoted part prices to the tolerance requirements, that family of parts that was in the report.
> Q: Other than that information, sir, do you rely on anything else?
> A: No.
> Q: In your report, sir, ... you talk about penetration rate–market penetration and penetration rates?
> A: Yes.
> Q: For the purposes of those market penetration rates, do you make any assumptions regarding the tolerances Scanpac powder will be able to satisfy?
> ...
> A: Yes.
> Q: What assumption do you make in that regard?
> A: The assumption is that there will be families of parts that can be produced using Scanpac technology that will meet required tolerances.
> Q: And for the assumption you make regarding market penetration and rates, what family of parts are you referring to?
> A: At this point it would be the types of parts that we reviewed in Richard Phillips' report. I have no other information beyond that.
> ...
> Q: ... Would you agree, sir, that if Scanpac does not meet some of the

> requirements for these parts that the opinions regarding market penetration in your report would change?
> ...
> A: Yes, I think it's reasonable that if a part cannot meet –the process cannot meet the requirements of a part it would not be used.

JA 178, Deposition of Ralph Hershberger ("Hershberger Dep.") at 73, 96-99. Hershberger plainly relies on Phillips's opinion. The problem is that, not only are there substantial reliability issues with Phillips's price calculations, but also, because Phillips fails to demonstrate that the parts he created would meet the requirements of potential customers, his report does not fit the facts of this case.

Without Lawley and Phillips, the hypothetical facts relied on by Hershberger have no evidentiary support, and thus, bear no apparent relation to the technology at issue.[14] For this reason, Hershberger's market penetration analysis is unsupported by sufficient data and is irrelevant–in either regard, it is inadmissible. See Daubert, 509 U.S. at 592 (requiring a "valid scientific connection to the pertinent inquiry").

ii. Methodology

---

[14] At oral argument, MTI drew the Court's attention to tests performed by Dr. Christer Aslund and reported in a 1998 Metal Powder Report article. See Transcript at 75:15-23 (article also cited by the Phillips Report at 5 n.1 and the Lawley Report at 6 n.9). These tests, and this report, do not provide an alternative basis for showing that the properties of Scanpac stainless steel 316L match the properties of equivalent wrought stainless steel. Dr. Aslund's research did not compare Scanpac stainless steel to equivalent wrought stainless steel, see PA 23, rather, it compared Scanpac stainless steel to water atomized stainless steel. See id. at P2694. Dr. Aslund's conclusory statement in the penultimate paragraph of the article that the Scanpac process produces P/M products with "properties that closely match those of the comparable wrought material" is, therefore, insufficiently supported by the tests performed. Id. at P2693. Moreover, even accepting that Aslund's tests demonstrate that the Scanpac process creates the potential for manufacturing P/M products with properties matching those of wrought material, Dr. Aslund's findings suffer from the same evidentiary shortcomings as Dr. Lawley's – there is nothing to show that the "properties" referred to in Dr. Aslund's article are in fact the properties demanded by MTI's largest potential customers. Id.

But even if the assumption that Scanpac is technically and commercially equivalent to wrought had some evidentiary basis, Hershberger's report would remain inadmissible because it is unreliable in a number of respects.

First, Mr. Hershberger's predicted penetration rate is based primarily on his experience with the introduction of three Hoeganaes products into the marketplace: Ancorsteel 1000C, Ancorbond, and Ancorsteel 85HP. See Hershberger Dep. at 149-50. Daubert requires a "valid scientific connection to the pertinent inquiry," here, the pertinent inquiry is the potential penetration rate of Scanpac products. Daubert, 509 U.S. at 592. Not only are these three products arguably too little upon which to base Hershberger's conclusions, but more importantly, qualitatively speaking, this data is unreliable as a predictor of Scanpac's potential performance.

Hershberger's estimated penetration rate data is unreliable, foremost, because the estimates of the three products considered are based on nothing but Hershberger's "recollection" as a former employee of Hoeganaes in the 1980s. Hershberger Dep. at 150-51. Hershberger admits as much and further admits that he did not seek to consult product literature or his former Hoeganaes colleagues to confirm his recollection of these three products. Id. at 499-50. Hershberger's reliance on his uncorroborated memory of how three products fared in his past experience, raises serious questions about the reliability of his methodology. See Chemipal Ltd. v. Slim-fast Nutritional Foods Int'l, Inc., 350 F. Supp. 2d 582, 593–94 (D. De. 2004) (excluding expert testimony on growth rates based on expert's own recollection of growth rates of other products he had worked with in the past, without checking the accuracy of his recollection); see also, K.W. Plastics v. United States Can Co., 131 F. Supp. 2d 1289, 1293 (M.D. Ala. 2001) (excluding expert opinion because the expert based his opinion solely upon his "experience and

knowledge of construction [costs]," but "failed to produce any documents corroborating his conclusion, even though [the plaintiff, had] ... records that would show construction costs.").

Faced with these issues, MTI cites Schneider v. Fried, 320 F.3d 396, 406 (3d Cir. 2003), for the proposition that an expert's experience can be sufficiently "good grounds" for an opinion. Plts.' Opp'n at 25. But Schneider, in which the expert relied on the *general teachings* of experience, is distinguishable from this case, in which Hershberger's conclusions are based upon his recollection of *specific numerical data*. See, e.g., Affidavit of Ralph Hershberger, dated September 30, 2003, appending the Hershberger Report, Table: "Market Penetration Experience of New Products at HC" (citing target growth rates at end of year five for Ancorsteel 1000C (5,000 tons, baseline at 0); AncorBond (65% of HC shipped as blended product from baseline of 15%); Ancorsteel 85HP (20,000 tones, baseline at 0), also citing actual rates for each product in years 1-5 after introduction, in tons for Ancorsteel 1000C and Ancorsteel 85HP, and as a percentage of shipped tonnage for Ancorbond). It is no stretch to say that Hershberger's recollection of figures from as long as twenty years ago are not sufficiently reliable to be put before a jury.

An equally grave problem with Hershberger's proposed testimony is that Hershberger fails to demonstrate that the market penetration rates of these three products are properly analogous to the potential rate for Scanpac products. In fact, the evidence tends to show the opposite: All three Hoeganaes products were improvements on previously-marketed Hoeganaes products. Acknowledging that Hoeganaes's marketing materials refer to Ancorbond as a "revolutionary event," "the most significant development since water atomization," see Plts.' Opp'n at 25, Hershberger nevertheless admitted that Ancorbond was, in fact, "introduced ... as an improvement of [Hoeganaes's] prior pre-mix or pre-blend processes." Hershberger Dep. at

439-41. Hershberger offered similar testimony with respect to Ancorsteel 1000-C and Ancorsteel 85HP:

> Q: [Mr. Wolfson for Carpenter] Sir, would you agree that Ancorsteel 1000-C was advertised as an improvement over a previous product known as Ancorsteel 1000-B?
> A: [Hershberger] Yes.
> Q: Okay. When Ancorsteel 1000-C was introduced Ancorsteel 1000-B had been sold to customers of Hoeganaes, right?
> A: Yes.
> ...
> Q: Isn't it true, sir, that when Hoeganaes introduced Ancorsteel 85HP it advertised it as an improvement over an existing [Hoeganaes] product?
> ...
> A: Yes, that's fair.

Hershberger Dep. at 434, 441-43. Hershberger's methodology of comparing MTI's hypothetical Scanpac products to Ancorbond, Ancorsteel 1000-C and Ancorsteel 85HP, each a new generation of a prior brand-name product, is of dubious reliability.

MTI attempts to bolster Hershberger's methodology, arguing that Scanpac is not a new product, that it is, rather, an improvement on already long-proven powder metal technology. See Plts.' Opp'n at 26. But in its previous pleadings, MTI has struck a very different tone, stating that

> [t]he revolutionary nature of Scanpac is that it allows cold pressing ... by conventional pressing methods ... or cold isostatic pressing ... , and fusion and densification by conventional sintering ....
> ...
> Moreover, as a matter of fact, Gregory Del Corso, the manager of R&D for Carpenter's powder products division testified that, before Scanpac, Carpenter had never before successfully press[ed] and sinter[ed] gas atomized powder (Del Corso Dep., at 26-27, 37-39). Furthermore, Louis Lherbier, Carpenter's Vice President of Technology -- with over forty years experience as a metallurgical engineer -- testified that, before Scanpac, he had never witnessed gas atomized powder manufactured into stainless steel test bars with properties comoparable [sic] to wrought bar. Lherbier Dep. at 11-17; 39-40.

PCSCMFC ¶9. Now, MTI cannot have it both ways: Either Scanpac is not a novel product

because it cannot achieve properties comparable to wrought; or it is a novel product, and can only be meaningfully compared to truly novel products. It will not suffice to argue that Scanpac is a new *product* based on an old *technology*. In a case such as this, where the product at issue is *both* a technology and the hypothetical products made possible by the technology, MTI seeks to draw a distinction without a difference.

Besides which, regardless of whether Scanpac is a novel product, Hoeganaes, the "largest domestic powder producer in the [United] States," cannot be meaningfully compared to MTI. See Hershberger Dep at 283. To analogize the market penetration rates of an established industry leader like Hoeganaes to a new start-up company like MTI, with a product and a technology that has never been sold before, is specious. This is even more so, considering that Hershberger admits to having known very little about MTI–such as the number of MTI employees or products sold by MTI in the past–when he undertook the comparison. See id. at 284. See also Group Health Plan, Inc. v. Philip Morris USA, Inc., 344 F.3d 753 (8th Cir. 2003) (precluding expert testimony, recognizing that expert's application of "real world examples" to facts of the case was unduly speculative). If Hershberger proffered some analysis of why such a facially inapt comparison was an appropriate methodology, than the issue would be at least arguable, but no such analysis was undertaken.

Hershberger's methodology cannot be found reliable by a jury and his opinion is, therefore, inadmissible under Daubert. But even if his methodology were not so problematic, a fundamental assumption of his market penetration analysis is that Scanpac is a viable alternative to wrought. This key assumption–which is essential to link Hershberger's Report to the damages issue in this case–has no factual basis. For all of the above reasons, Carpenter's motion is granted with respect to Ralph Hershberger.

d. Motion to Strike Hershberger Report Pursuant to Fed. R. Civ. P. 37(c)(1)

In addition, Carpenter seeks to have Hershberger's Report stricken pursuant to Fed. R. Civ. P. 37(c)(1) because Hershberger admitted at his first deposition that he destroyed virtually all of the Rule 26(a)(2)(B) materials underlying his report. See Defendants' Renewed Motion to Strike Hershberger Report and Brief in Support ("Defs.' Rule 37 Mot.") at 6,12, 14.[15] Carpenter also seeks to have the Court impose lesser spoilation sanctions within the Court's discretion. Id. Rule 37(c)(1) provides that a party who does not disclose information required by Rule 26(a) may be subject to certain sanctions, including the exclusion of testimony and reasonable expenses and attorney's fees. Fed. R. Civ. P. 37(c)(1). For the reasons discussed in depth above, Hershberger's Report is being excluded on Daubert grounds, thus, the Motion to Strike is moot. The Court will, however, entertain Carpenter's motion for lesser sanctions.

In determining whether sanctions for spoilation are appropriate, the court considers (1) the degree of fault of the party who altered or destroyed the evidence; (2) the degree of prejudice suffered by the opposing party; and (3) whether there is a lesser sanction that will avoid substantial unfairness to the opposing party and, where the offending party is seriously at fault,

---

[15] After Hershberger's deposition, MTI submitted four pages of recreated data and offered to make Hershberger available, at Defendants' expense to be deposed again for up to two hours. Id. at 1. On October 3, 2003, Carpenter petitioned the Court for emergency relief, requesting that the Court either strike Mr. Hershberger's report or that it permit the second deposition to go forward but defer the issue of sanctions until the date provided in the Scheduling Order for such motions. Id. The Court made some allowance for Carpenter–additional deposition time and an opportunity to respond to the recreated data–but denied Defendants' request to strike the Hershberger Report, without prejudice to renew it, on November 21, 2003 as provided in the Scheduling Order. Id. The Court further ordered that Carpenter's request for expenses and attorney's fees may be renewed after the renewed motion to strike was determined. Id. The Motion currently before the Court is Defendants' Renewed Motion, which Carpenter alleges was filed because Hershberger's recreated data failed to cure the prejudice to Carpenter as a result of Mr. Hershberger's destruction of Rule 26 materials.

will serve to deter such conduct by others in the future. Schmid v. Milwaukee Elec. Tool Corp., 13 F.3d 76, 79 (3d Cir. 1994); Quaglietta v. Nissan Motor Co., No. Civ. A. 97-5965, 2000 WL 1306791, at *2 (D.N.J. Aug. 16, 2000). Of these factors, the degree of prejudice to the opposing party is critical in deciding whether to sanction spoilation. See Schmid, 13 F.3d at 81. In weighing and determining the appropriateness and severity of sanctions, courts examine the materiality and value of the suppressed evidence upon the ability of a victim to fully and fairly prepare for trial. See Wilson v. Volkswagen of Am., Inc., 561 F.2d 494, 504 (4th Cir. 1977); Wm. T. Thompson Co. v. Gen. Nutrition Corp., 593 F. Supp. 1443, 1456 (C.D. Cal. 1984).

Here, Mr. Hershberger testified that sometime between April 14, the date of his expert report, and April 18, 2003, he discarded all of his drafts and original supporting materials at what he thought, and what he originally testified, was the direction of Plaintiffs' counsel:

> Q: [Mr. Wolfson, for Carpenter] For purposes of the map [concerning Scanpac costs in relation to competitive technologies] that you have on page 9 [of the Hershberger Report], did you do raw data calculations?
> A: [Mr. Hershberger] I compared–yes.
> Q: Did you retain that?
> A: No, I did not.
> Q: What happened to it? You threw it out?
> A: I got rid of it after I submitted the reports.
> Q: Why?
> A: I was asked by counsel not to keep anything.
> Q: Who was the counsel that asked you not to keep anything?
> A: Mr. Malasky.
> Q: So based on that instruction, you discarded that material?
> A: Yes.
> Q: Did you discard any other raw data work-ups or mark-ups?
> A: I discarded anything that I had used after I submitted the final report.

Hershberger Dep. at 122-23. Later the same morning, Hershberger testified further, that he could not recall the penetration rate estimates for the three products he relied on his report, and that at the time he produced his report he was able to recall those estimates because

he "could refer to, documents, [his] notes which [he had] subsequently discarded ... as a result of speaking with Mr. Malasky." Id. at 151-52. Later, after a lunch break, Hershberger testified that "there was a severe misunderstanding between what [Mr. Hershberger] had said [in the morning] and what actually happened concerning keeping the calculations data, notes, other materials related to the case ...." Id. at 164.[16] Hershberger testified that he had, in fact, only been instructed that he "did not have to keep drafts" of his expert report. Id. at 165.

But even drafts are, arguably, discoverable material under Rule 26. See B.C.F. Oil Refining, Inc. v. Consolidated Edison Co. of New York, Inc., 171 F.R.D. 57, 62 (S.D.N.Y. 1997) ("Courts have even extended the scope of the rule to allow disclosure of 'drafts of reports or memoranda experts have generated as they develop the opinions they will present at trial.'"); Colindres v. Quietflex Mfg., L.P., 2005 WL 1367102, *4 (S.D. Tex. 2005) (same); Trigon Ins. Co. v. U.S., 204 F.R.D. 277, 282-283 (E.D. Va. 2001) ("Any information reviewed by an expert will be subject to disclosure including drafts of reports sent from and to the testifying experts."); Cf. Security Ins. Co. of Hartford v. Trustmark Ins. Co., 218 F.R.D. 29, 32 (D. Conn. 2003). In short, while the question of whether experts' drafts are discoverable is, thus far, undecided in this circuit, Plaintiffs' counsel ought not have decided the issue in advance by instructing his expert to dispose of drafts.

Whether discarding these materials was deliberately orchestrated, or whether it was the

---

[16] Plaintiffs' counsel's discussion of Hershberger's testimony, with Hershberger, during the lunch break, was itself inappropriate and contrary to Fed. R. Civ. P. 30(c) and Hall v. Clifton Precision, 150 F.R.D. 525, 528 (E.D. Pa. 1993), which require that depositions be conducted as close to actual trial presentation as possible. See Transcript 123-24; see also Mruz v. Caring, Inc., 107 F. Supp. 2d 596, 606, rev'd on other grounds, 166 F. Supp. 2d 61 (D.N.J. 2001) (citing Hall favorably).

result of a misunderstanding, or even negligence on the part of Plaintiffs' counsel, it appears to the Court that Carpenter's case was not prejudiced. Carpenter's core arguments to preclude Hershberger's testimony were that Hershberger relied solely on his recollection of past events and that Hershberger relied on the testimony of MTI's other unreliable experts. At the heart of Carpenter's winning argument is the fact that Hershberger's methodology of recollection did not involve "materials" of any significance–back-up or otherwise–and it is the very nature of this argument that it can be effectively mounted without access to anything besides the expert report and deposition testimony.

Thus, to the extent that Carpenter was prejudiced at all, it only could have been in terms of lost time and lost money. Indeed, Hershberger's inability to produce his back-up materials necessarily required Carpenter to incur additional expenses in preparing supplemental expert reports and in preparing to take a second deposition of Mr. Hershberger, upon reviewing Hershberger's "recreation" of his discarded data. Any prejudice to Carpenter was, however, remedied by Judge Hughes's granting leave to Carpenter to take this second deposition of Hershberger, and additionally, by the Court presently allowing defense to recover reasonable expenses and attorney fees associated with obtaining compliance with federal discovery rules, as will be set forth in the Order accompanying this Opinion.

It a appears to the Court that the sanction of costs is appropriate in a case such as this, wherein there is some dispute about the intent of Plaintiffs' counsel, and where such a lesser sanction will avoid substantial unfairness to the opposing party, while deterring Plaintiffs' counsel from giving their experts such ambiguous and questionable instructions in the future.

4. Frederick R. Warren-Boulton

a. Proposed Testimony

Frederick Warren-Boulton's ("Warren-Boulton" or "Dr. Warren-Boulton") services were retained by MTI to "estimate damages to [MTI] due to the loss of rights to market Scandinavian Powdertech's powder metallurgy technology in North America[] and the rest of the world." JA 195, Expert Report of Frederick R. Warren-Boulton ("Warren-Boulton Report") at 2. Warren-Boulton's report assumes, "[a]s detailed in the expert reports of Dr. Alan Lawley, Mr. Ralph Hershberger and Mr. Richard Phillips, [that] Scanpac technology ... can be used for many stainless and carbon steel parts that currently are formed by other methods (e.g., machining, forging or casting) ... [and] provides substantial cost savings in producing complex steel parts." Id. at 2. Also, Warren-Boulton confirmed in his Declaration that "[f]or the purposes of [his] damage analysis, [he] assumed that the opinions of each of plaintiffs' other experts are correct and reliable." PA 146, Declaration of Frederick R. Warren-Boulton, dated December 30, 2003 ("Warren-Boulton Decl.") ¶ 6.

Warren-Boulton examined several alternative "but-for" worlds that, in his opinion, could have occurred absent the alleged illegal acts by Carpenter. In all but the third of his five scenarios, Warren-Boulton assumed, further, that MTI would have exploited its rights by "producing ... and selling parts or components made from Scanpac powder to manufacturers of stainless steel parts, such as Swagelok and Parker-Hannifin." Id. at 3-4. Finally, for each of these scenarios, Warren-Boulton provided both a "bottom-up" and "top-down" estimate.[17]

b. Qualifications

---

[17] The Warren-Boulton Report explains these analyses as follows:

> The "bottom-up" estimate assumes that sales of Scanpac components are limited to components for valves, fittings and fuel injectors, applications for which I have individual data. The "top-down" estimate is based on an estimate of total potential sales of Scanpac components for all applications.

Id. at 4.

Dr. Warren-Boulton is an "economist and Principal with MiCRA, an economics consulting and research firm." Id. at 1. He received a B.A. degree from Yale University, an M.P.A. from the Woodrow Wilson School of Princeton University, and a Ph.D. in Economics from Princeton University. He has served as a professor of economics, chief economist for the Antitrust Division of the U.S. Department of Justice, and in a number of other capacities detailed in his expert report. Id. at 1. Carpenter does not challenge Dr. Warren-Boulton's expert qualifications. Defs.' Reply at 23.

c. Issues of Fit and Relevance

The first and most important issue bearing on the admissibility of Dr. Warren-Boulton's testimony is its fit to the facts of this case. Up to this point, the Court has ruled that absent some reliable evidence that *Scanpac can achieve the properties required by wrought stainless steel parts manufacturers*, any expert testimony that relies on such assumptions is insufficiently connected to facts of this case, and cannot assist the jury determining MTI's damages, or issues related to MTI's damages.

Here, four out of five of Warren-Boulton's damages scenarios rely on this very assumption, insofar as they assume MTI would be able to sell Scanpac parts to manufacturers such as Parker Hannifin and Swagelok. As discussed above, a hypothetical fact that is relied on in an expert's opinion must be based on facts that have at least some evidentiary support. See Section 3.c.1, *supra* (citing case law to this effect and excluding Dr. Ralph Hershberger's testimony on the same grounds). The Court has no reliable evidence suggesting that Scanpac parts are a viable replacement for wrought, and thus Dr. Warren-Boulton's first, second, fourth and fifth damages scenarios rely on an unsupported assumption. If there were any basis for that assumption, Warren-Boulton's opinion would be sufficiently connected to facts in issue, but as

it stands these scenarios must be excluded, as they would be unhelpful to the jury.

In addition, Warren-Boulton's third scenario, which assumes that "MTI would have exploited its rights by entering into the Net Shape LLC joint venture with Carpenter," must be excluded because it is contrary to established fact. See Warren-Boulton Report at 3. As explained in this Court's summary judgment Opinion,

> It is ... undisputed, that ... the MTI/SP Agreement [has] remained in force and nothing about MTI's rights under that agreement ha[ve] been amended–that is, MTI maintained its Scanpac rights to the extent that SP had them[; and, further,]
> ...
> it is clear from the undisputed facts that agreement on the essential elements of the proposed MTI/Net Shape/Carpenter joint venture was never reached–not at the Boston Meeting or anytime thereafter.

Material Technologies, Inc. v. Carpenter Technology Corp., Civ. No. 01-2965 (SRC), slip op. at 20, 28 (D.N.J. Dec. 14, 2004). In reality, MTI has at all times maintained the rights which Warren-Boulton assumes would have been parlayed by MTI into a joint-venture agreement with Carpenter. No such joint-venture agreement was reached. The assumption underlying Warren-Boulton's third scenario, therefore, "fl[ies] in the face of reality" and analysis that flows from that assumption cannot be admitted. See In re TMI Litigation, 193 F.3d 613, 683 (3d Cir. 1999) (excluding expert testimony because the "testimony and the assumptions that underlie [the expert's] damages calculations are inconsistent with ... reality ..."). At the very least, Warren-Boulton's third "but for" scenario depends on disproving established facts that will not be open to dispute at trial. Warren-Boulton's third scenario, and the analysis that flows therefrom, would be unhelpful to the jury and is, therefore, irrelevant.

Because Warren-Boulton formulated his third "but for" scenario before these factual and legal issues were settled in this Court's summary judgment Opinion, his unsupported assumptions do not tarnish the reliability of his methodology. It is worth mentioning, however,

that the reliability of Warren-Boulton's analysis has not gone undisputed. Carpenter argues, among other things, that Warren-Boulton erroneously relied on Hershberger's penetration rates as if they applied to hypothetical Scanpac parts of *all* weights. There is some dispute over whether Hershberger's estimated rates are wholly inapplicable to parts outside the 200-2000 gram weight range–the range that is the focus of his opinion–or whether that is merely the "optimal application" range, outside of which, Hershberger's estimates would still be viable. See Transcript at 129-133 (wherein MTI defends the applicability of Hershberger's findings to parts outside the 200-2000 gram weight range); Hershberger Dep. 360-61.

It is, however, unnecessary to decide this issue: Hershberger's penetration rates are demonstrably unreliable with respect to *any* weight range. See Section 3.c.2, *supra*. Anticipating this issue, MTI argues that Warren-Boulton did not take Hershberger's penetration rates on faith, that in fact, his Report relies on other sources. Indeed, the Warren-Boulton Report states that "Mr. Hershberger's estimated penetration rates appear reasonable. They are also consistent with predicted penetration rates from other industry sources identified in Appendix 2." Warren-Boulton Report at 11 (citing Hershberger as well as "Carpenter's internal technical reports [which] provide estimates of the expected time for Scanpac to reach the inflextion point in its penetration path that are also consistent with Mr. Hershberger's analysis. See Carpenter Engineering Products, EPG Technology Benchmarking Report, p 18. CTDP001530."). In addition, the Warren-Boulton Report cites "discussions with Tom Dudley," who, MTI explained at oral argument, has "experience with Swagelok and Parker-Hannifin, ... and [whose] experience was expressed to Mr. Warren-Boulton ... and after he talked to Mr. Dudley about this, [Warren-Boulton] reached the conclusion that the penetration rates would be very similar to what Mr. Hershberger said." Id. at Appendix II, p.2; Transcript 131:4-13; see

also Warren-Boulton Decl. ¶11 (same).

While the Court is satisfied that Warren-Boulton, at least arguably, relied on sources other than Hershberger for his penetration rates, the point is moot. Hershberger's testimony was not only excluded because of its unreliability, but also because *any* evidence as to the potential penetration rate of Scanpac must be based on the premise that Scanpac is a viable alternative to wrought stainless steel–and evidence that is based on this unsupported premise, whether the source is Hershberger, Carpenter or Dudley, is divorced from the reality of this case. Whatever the basis for Warren-Boulton's assumed penetration rates of Scanpac, without any evidence suggesting Scanpac is a viable product, Dr. Warren-Boulton's opinion remains unconnected to the facts of this case.

While it is easy enough for MTI, with the help of Phillips, Hershberger and Warren-Boulton to hypothetically assume that Scanpac parts have the potential to replace wrought stainless steel parts in the marketplace, such hypothetical assumptions must be connected to the case at bar through some fact or data that take them out of the realm of pure speculation and into the realm of possibility. This is not a high bar, but in this case it has not been met.[18]

III. Conclusion

For all of the reasons discussed, Carpenter's motion to preclude the testimony of Plaintiffs' designated trial experts will be granted with respect to Dr. Alan Lawley, Richard Philips, Ralph Hershberger and Dr. Frederick Warren-Boulton, in an Order accompanying this

[18] In view of the Court's decision herein, the Court is of the opinion that it may now be appropriate revisit the question of damages in the context of summary judgment, which was left an open issue in the Court's prior summary judgment opinion. See Material Technologies, Inc. v. Carpenter Technology Corp., Civ. No. 01-2965 (SRC), slip op. at 55-57 (D.N.J. Dec. 14, 2004).

Opinion and dated the same. The Court reserves judgment with respect to Francis C. Hand. Carpenter's Renewed Motion to Strike the Hershberger Report pursuant to Fed. R. Civ. P. 37(c)(1), as discussed above, will be granted in part and dismissed in part, likewise, in an Order accompanying this Opinion and dated the same.

Dated: June 28, 2005 /s/ Stanley R. Chesler, U.S.D.J.